

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.

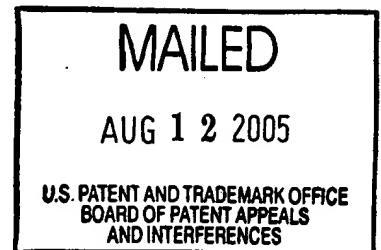
UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte JOHANN ENGELHARDT

Appeal No. 2005-1844
Application No. 09/817,646

ON BRIEF



Before BARRETT, LEVY, and SAADAT, Administrative Patent Judges.
LEVY, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal from the examiner's final rejection of claims 1-35¹, which are all of the claims pending in this application.

We AFFIRM.

¹ In an amendment filed (June 24, 2004) subsequent to the final Rejection, appellant cancelled claims 7 and 19. The amendment was entered by the examiner for purposes of appeal (Advisory Action, mailed July 13, 2004).

BACKGROUND

The appellant's invention relates to a method of aligning the optical beam path of a microscope.

Claim 1 is representative of the invention, and is reproduced as follows:

1. A method for aligning the optical beam path of a microscope, having a light source (1), a microscope optical system, a detection stop (12), and a detection device (13), wherein the method comprises the steps of:

a) providing a center of the detection stop (12) as a first optical point;

b) providing a focus of the light source as a second optical reference point wherein an entire beam path is defined by said first optical reference point and said second optical reference point; and

c) carrying out an iterative alignment of the light source until the entire beam path is aligned with respect to said first optical reference point and said second optical reference point, so that the light precisely strikes the detection stop.

The prior art references of record relied upon by the examiner in rejecting the appealed claims are:

Ellis et al. (Ellis)	5,035,476	Jul. 30, 1991
LoBianco et al. (LoBianco)	5,214,492	May 25, 1993
Gamble	5,681,987	Oct. 28, 1997

Claims 12-18, 20-27, 30, 31, 34, and 35 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Ellis in view of Gamble.

Claims 1-6, 8-11, 28, 29, 32, and 33 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Ellis in view of Gamble and LoBianco.

Rather than reiterate the conflicting viewpoints advanced by the examiner and the appellant regarding the above-noted rejections, we make reference to the answer (mailed November 2, 2004) for the examiner's complete reasoning in support of the rejections, and to the brief (filed August 11, 2004) for the appellant's arguments there against.

Only those arguments actually made by appellant have been considered in this decision. Arguments which appellant could have made but chose not to make in the brief have not been considered. See 37 CFR § 41.37(c)(1)(vii)(eff. Sept. 13, 2004).

OPINION

In reaching our decision in this appeal, we have carefully considered the subject matter on appeal, the rejections advanced by the examiner, and the evidence of obviousness relied upon by the examiner as support for the rejections. We have, likewise, reviewed and taken into consideration, in reaching our decision, appellant's arguments set forth in the brief along with the examiner's rationale in support of the rejections and arguments

in rebuttal set forth in the examiner's answer. Upon consideration of the record before us, we make the following findings.

At the outset, we note appellant's assertion (brief, page 3) that the claims stand or fall together. Notwithstanding this statement, appellant present arguments for independent claims 1 and 12. Accordingly, we select claim 1 as representative of the claims rejected under 35 U.S.C. § 103(a) as being unpatentable over Ellis in view of Gamble and LoBianco, and select claim 12 as representative of the group of claims rejected under 35 U.S.C. § 103(a) as being unpatentable over Ellis in view of Gamble.

We begin with claim 12. In rejecting claims under 35 U.S.C. § 103, it is incumbent upon the examiner to establish a factual basis to support the legal conclusion of obviousness. See In re Fine, 837 F.2d 1071, 1073, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988). In so doing, the examiner is expected to make the factual determinations set forth in Graham v. John Deere Co., 383 U.S. 1, 17, 148 USPQ 459, 467 (1966), and to provide a reason why one having ordinary skill in the pertinent art would have been led to modify the prior art or to combine prior art references to arrive at the claimed invention. Such reason must stem from some teaching, suggestion or implication in the prior art as a whole

or knowledge generally available to one having ordinary skill in the art. Uniroyal, Inc. v. Rudkin-Wiley Corp., 837 F.2d 1044, 1051, 5 USPQ2d 1434, 1438 (Fed. Cir. 1988); Ashland Oil, Inc. v. Delta Resins & Refractories, Inc., 776 F.2d 281, 293, 227 USPQ 657, 664 (Fed. Cir. 1985); ACS Hosp. Sys., Inc. v. Montefiore Hosp., 732 F.2d 1572, 1577, 221 USPQ 929, 933 (Fed. Cir. 1984). These showings by the examiner are an essential part of complying with the burden of presenting a prima facie case of obviousness. Note In re Oetiker, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992). If that burden is met, the burden then shifts to the applicant to overcome the prima facie case with argument and/or evidence. Obviousness is then determined on the basis of the evidence as a whole. See id.; In re Hedges, 783 F.2d 1038, 1039, 228 USPQ 685, 686 (Fed. Cir. 1986); In re Piasecki, 745 F.2d 1468, 1472, 223 USPQ 785, 788 (Fed. Cir. 1984); and In re Rinehart, 531 F.2d 1048, 1052, 189 USPQ 143, 147 (CCPA 1976).

The examiner's position (answer, pages 3 and 4) is that the center of the detection stop meets the claimed first reference point, and that the center of objective pupil 61 meets the claimed second reference point. The examiner notes that when the system's elements are aligned for operation, they will be aligned or alignable with respect to the reference points. The examiner

acknowledges (id.) that Ellis does not disclose adjusting the light source. To overcome this deficiency of Ellis, the examiner turns to Gamble for a teaching of an alignable light source.

Appellant's position (brief, page 6) is that the rejection is based on impermissible hindsight because Ellis is not directed toward the problem of aligning a microscope, and because an object of Ellis' invention is to provide a confocal laser scanning transmission microscope which can easily provide an image of transmitted light and includes a small number of optical components. Appellant additionally asserts (id.) that Ellis discloses that conventional microscopes include such a large number of optical components that it is difficult to adjust their alignment. Appellant asserts (brief, page 7) that Ellis is so unappreciative of alignment that he makes no mention at all of alignment in the claims or the Description of the Preferred Embodiment. Specifically, it is argued that Ellis is silent regarding optical reference points, beam path, and adjusting a light source. It is further argued, (id.) that conventional microscopes do not utilize point light sources, and that without a point light source, alignment by moving the light source is not possible. Appellant additionally asserts (brief, pages 7 and 8) that making a light source adjustable, as in Gamble, would

exacerbate the problem Ellis is solving, since Gamble's light arrangement would increase the parts count in the microscope. Appellant further asserts (brief, page 8) that in Gamble, there is no mention of aligning the light source with respect to points in the microscope. It is additionally asserted (id.) that Ellis has no reason to look to Gamble's adjustable light source in a resonance contact scanning force microscope to solve his problem, and that Gamble is nonanalogous because Gamble's resonance contact scanning force microscope is completely different in structure and function than the microscope of Ellis.

From our review of Ellis we find that the reference is directed to a confocal scanning transmission microscope. In the microscope, a light beam converged in a fine spot is deflected in two dimensions by two deflecting elements to cause the light spot to scan the surface of the specimen (col. 1, lines 14-18). A confocal arrangement is created by arranging a number of optical components. A drawback of this microscope is that the optical system for guiding a transmitted light again to the deflecting element is complicated, and the microscope is accordingly large-sized. The microscope includes such a number of optical components that it is difficult to adjust their alignment (col. 1, lines 30-37). It is further disclosed in Ellis (col. 1, lines

55-59) that the invention provides a confocal laser scanning transmission microscope which "comprises deflecting elements for deflecting a light beam at a set scanning frequency in a main scanning direction and in an auxiliary scanning direction perpendicular to the main scanning direction to irradiate the light spot to a specimen."

From the disclosure of Ellis, we find that the reference recognizes the difficulty of adjusting the alignment of a confocal microscope due to the large number of optical components (col. 1, lines 35-37).

Turning to Gamble, we find that the reference generally relates to a scanning force microscope (col. 1, lines 11 and 12). Gamble discloses a laser light source 74 mounted in the upper portion of the body for producing a focused laser beam (col. 7, lines 4-7). Adjustment screws 80 may be provided for adjusting the alignment and aiming of the laser light source, mounted in threaded access ports 81, provided in the body (col. 7, lines 13-15). Laser light source 270, with associated optics, is mounted in the body for producing a focused laser beam directed at and deflected by the reflective cantilever arm (col. 8, lines 36-39).

An opening 273 is provided in the removable base to allow the laser beam to pass through the cantilever arm. A planar mirror 200 is preferably mounted at a distal end of an adjustment screw to reflect the deflected beam 286 to a photosensor 288 mounted in the body for receiving the deflected laser beam (col. 8, lines 39-46). From the disclosure of Gamble, we find that the reference recognizes the need to adjust the laser source in order to align the optics, for more precise operation of the microscope. From these teachings of Ellis and Gamble we find that an artisan would have been taught to provide an adjustable laser source in the microscope in order to provide better alignment of the optics in the system; i.e., because Ellis recognizes the difficulty involved in aligning the microscope because of the number of optical components, and Gamble's teaching of making the light source adjustable for adjusting the aligning and aiming of the laser light source, that an artisan would have been motivated to make the light source of Ellis adjustable.

We agree with appellant's assertions (brief, page 7) that there is no motivation, suggestion, or teaching in Ellis of making the light source adjustable as an alignment means.

However, as noted, supra, Ellis does recognize the difficulty in aligning microscopes, and as noted by the examiner (answer, page 7) Gamble teaches adjustment of the microscope light source for the express purpose of alignment.

With respect to appellant's assertion (brief, page 7) that conventional microscopes do not utilize point light sources, and that in the absence of a point light source, alignment by moving the light source is not possible, we agree with the examiner (id.) that Ellis discloses point light source illumination via laser 51 and/or pinhole 53.

We are not persuaded by appellant's assertion (brief, pages 7 and 8) that making a light source adjustable in Ellis in view of Gamble, would exacerbate the problem that Ellis is solving, since Gamble's light arrangement would increase the parts count in the microscope. From our review of the record, we find that appellant's statement reflects a misreading of Ellis because Ellis (col. 1, lines 52 and 53) seeks to reduce the number of optical components, not total components or parts count. The adjustment screws of Gamble are not optical elements and would not add optical elements to the system of Ellis.

We are not persuaded by appellant's assertion (brief, page 8) that Gamble does not disclose a confocal microscope and is not

solving the problem of aligning a microscope. The issue is not the type of microscope used, but rather ensuring that all of the optical components are properly aligned so that the microscope properly magnifies the target or specimen. In addition, we do not agree that Gamble "is not solving the problem of aligning a microscope." Gamble discloses (col. 7, lines 15-20) that reflective planar mirror 82 reflects the deflected beam 88 to the photosensor 90, which is mounted to the body of the microscope for receiving the deflected laser beam. An electrical signal 102 generated by the photosensor indicates the amount of deflection of the laser beam by the cantilever arm (col. 7, lines 24). Deflection signal 102 is processed in processing unit 70 for generating feedback. The processing unit provides feedback to maintain a substantially constant amount of force of the probe tip to keep the probe tip in constant contact with the surface of the specimen, as shown in figure 5 (col. 7, lines 37-49). Thus, although Gamble is concerned with using feedback from the deflected beam to keep the probe tip in contact with the surface of the specimen, Gamble is also directed to using adjustment screws 80 for adjusting the alignment and aiming of the laser beam. The adjusting and alignment of the laser source allows the

beam deflection to be analyzed and provide feedback for keeping the probe in contact with the specimen. Accordingly, we find that Gamble is concerned with the alignment of the laser light source as part of keeping the system in alignment.

Nor are we persuaded by appellant assertion (brief, page 8) that no mention is made in Gamble of alignment of the light source with respect to points in the microscope. As stated, supra, Gamble is concerned with accurately measuring beam deflection within the microscope. In addition, we agree with the examiner (answer, page 9) that Ellis teaches a deflection stop 65 and focusing the light source at several locations. We agree with the examiner (id.) that the elements of the references do not have to be labeled as "reference points" in order to function as reference points. As the light source of Ellis in view of Gamble will be aligned with respect to the elements of the system, the light source will also be aligned with definable reference points located on the optical path. We add that Gamble was not relied upon for a teaching of the reference points, as the reference points are disclosed by Ellis, as noted by the examiner (answer, pages 3 and 4).

Nor are we persuaded by appellant's assertion (brief, page 8) that Gamble contains no teaching regarding any type of

alignment. As we found, supra, Gamble teaches (col. 7, lines 13-15), the adjustment screws "may be provided for adjusting the alignment and aiming of the laser light source." For the same reason, we are not persuaded by appellant's assertion (brief, page 9) that "[t]hus, even if Ellis were interested in alignment of the light source, there is no motivation for Ellis to look to a nonanalogous system, such as Gamble's which does not even address alignment." We add that we find Gamble's teachings to be analogous to the teachings of Ellis because both references are concerned with having an optical system that is aligned and is able to properly magnify the specimen.

From all of the above, we are not persuaded of any error on the part of the examiner, and find that the combined teachings of Ellis and Gamble suggest the limitations of claim 12. Accordingly, the rejection of claim 12 under 35 U.S.C. § 103(a), as set forth by the examiner, and amplified by our findings, is affirmed. In addition, as appellant asserts that the language of claim 30 is analogous (brief, page 11) to claim 12, and asserts that claims 13-22, 24-27, 30, 31, 34, and 35 fall with claim 12, the rejection of claims 13-22, 24-27, 30, 31, 34, and 35 under 35 U.S.C. § 103(a) is affirmed.

We turn next to claim 1. At the outset, we make reference to our findings, supra, with respect to the teachings of Ellis and Gamble. In addition, we note that claim 1 recites that the adjustment to the light source is iterative.

The examiner's position (answer, pages 5 and 6) is that Ellis and Gamble do not teach adjusting the light source in an iterative manner. To overcome this deficiency of Ellis and Gamble, the examiner turns to LoBianco for a teaching of an iterative method of adjusting the emitted light beam in an optical system, for alignment. With respect to LoBianco, appellant asserts (brief, page 14) that LoBianco does not disclose a microscope, alignment of microscope components, or an alignable light source. It is further asserted (id.) that "LoBianco does not teach or suggest the Claim 1 limitations regarding a detection stop, optical reference points, a beam path defined with respect to the reference points, or a light source alignable with respect to the beam path." We note at the outset that appellant's specification (page 4), including originally filed claim 7 (specification, page 11), refer to iterative alignment. However, we find no structure disclosed for carrying out the iterative alignment of the light source. In addition, we

note the disclosure of LoBianco (col. 2, line 22) that "[f]ig.2 is a schematic diagram of the microscope 20" Thus, we do not agree with appellant that LoBianco does not disclose a microscope. Moreover, from the definition provided by Webster's New World Dictionary², we find that an artisan would consider the term "iterative" to mean "repetitious, repeating or repeated." From this definition, we find that the manually adjusted screws of Gamble are iterative because a person using the microscope would turn the adjustment screws repeatedly as needed, to align the light source. Thus, we find that Gamble suggests iterative adjustment of the light source such that the optical elements properly magnify the target or specimen. However, even if, assuming arguendo, we are incorrect, and Gamble does not teach or suggest that the adjustable light source is iteratively adjusted, we find that LoBianco discloses using an iterative process to adjust the optic beam deflection such that the object under the microscope is properly magnified, for the reasons set forth by the examiner (page 6). We are not persuaded by appellant's assertion (brief, page 14) that "LoBianco does not teach or suggest the Claim 1 limitations regarding a detection stop,

² © 1972, New World Publishing Company. A copy of the pertinent pages accompanies the Decision.

optical reference points, a beam path defined with respect to the reference points, or a light source alignable with respect to the beam path," because LoBianco is not relied upon for any of these features in the rejection.

From all of the above, we find that the teachings of Ellis and Gamble suggest the limitations of claim 1, and consider LoBianco to be cumulative to the teachings of Ellis and Gamble. However, we affirm the rejection of claim 1 under 35 U.S.C. § 103(a) as being unpatentable over the teachings of Ellis, Gamble and LoBianco. The Board may rely on less than all of the references applied in an obviousness rational without designating it as a new ground of rejection. See In re Bush, 296 F.2d 491, 496, 131 USPQ 263, 266-67 (CCPA 1961); In re Boyer, 363 F.2d 455, 458 n.2, 150 USPQ 441, 444 n.2 (CCPA 1966). As claims 2-6, 8-11, 28, 29, 32, and 33 fall with claim 1, the rejection of claims 2-6, 8-11, 28, 29, 32, and 33 under 35 U.S.C. § 103(a) is affirmed.

To summarize, the decision of the examiner to reject claims 1-6, 8-18, and 20-35 under 35 U.S.C. § 103 is affirmed.

AFFIRMED

BOARD OF PATENT
APPEALS
AND
INTERFERENCES

Appeal No. 2005-1844
Application No. 09/817,646

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SIMPSON & SIMPSON, P.L.L.C.
5555 MAIN STREET
WILLIAMSVILLE, NY 14221-5406

SECOND COLLEGE EDITION

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*of the
American Language*

David B. Guralnik, *Editor in Chief*

THE WORLD PUBLISHING COMPANY

New York and Cleveland

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Library of Congress Catalog Card Number: 71-182408

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itaconic acid

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it-a-con-ic acid (it'ə kən'ik) [arbitrary transposition of *aconitic* (< *ACONITE* + *-ic*)] a white crystalline material, $C_6H_4O_4$, prepared by the fermentation of sugar with a special mold: it is used in making resins and plasticizers

ital. italic (type)

it-tal-la (ē tā'l'yā) *It. name of ITALY*

it-tal-ian (i tā'l'yān) *adj.* [ME. < L. *Italianus* < *Italia*, Italy] of Italy, its people, their language, or culture — *n.* 1. a native or inhabitant of Italy 2. the Romance language of the Italians

it-tal-ian-ate (-it; also, & for *v. always*, -āt') *adj.* [It. *italianato*] of Italian form, appearance, or character — *vt.* -at'ed, -at'ing [It. *italianare*] same as **ITALIANIZE**

Italian East Africa former It. colony in E Africa, consisting of Ethiopia, Eritrea, & Italian Somaliland

it-tal-ian-ism (-iz'm) *n.* 1. an Italian expression, idiom, or custom 2. Italian spirit, quality, etc. 3. fondness for Italian customs, ideas, etc.

it-tal-ian-ize (-iz') *vt., vi.* -ized', -iz'ing [Fr. *italianiser*] to make or become Italian in character, form, etc. — **it-tal-ian-iz-a-tion** *n.*

Italian Somaliland former It. colony on the E coast of Africa: merged with British Somaliland to form Somalia

Italian sonnet same as **PETRARCHAN SONNET**

it-tal-ic (i tā'l'ik) *adj.* [L. *Italicus*] 1. of ancient Italy, its people, etc. 2. designating or of the subfamily of the Indo-European languages that includes Latin, Oscan, Umbrian, other languages of ancient Italy, and the Romance languages — *n.* the Italic languages collectively

it-tal-ic (i tā'l'ik, -i) *adj.* [see prec.: so called because first used in an Italian edition of Virgil (1501)] designating or of a type in which the characters slant upward to the right, used variously, as to emphasize words, indicate foreign words, set off book titles, etc. [*this is italic type*] — *n.* 1. an italic letter or other character 2. [usually pl., sometimes with sing. v.] italic type or print

it-tal-i-clism (i tā'l'ə siz'm) *n.* same as **ITALIANISM** (sense 1)

it-tal-i-cize (-siz') *vt.* -cized', -ciz'ing 1. to print in italics 2. to underscore (handwritten or typed matter) with a single line to indicate that it is to be printed in italics — **it-tal-i-ciz-a-tion** *n.*

it-tal-o- (i tā'l'ō) *a combining form meaning:* 1. Italian 2. Italian and [Italo-American]

It-a-ly (it'ə lē) [L. *Italia*, earlier *Vitalia*] country in S Europe mostly on a peninsula extending into the Mediterranean & including the islands of Sicily & Sardinia: 116,304 sq. mi.; pop. 54,388,000; cap. Rome: It. name, **ITALIA**

It-tas-ca (i tā's'kə), Lake [coined by H. R. SCHOOLCRAFT] lake in NW Minn., a source of the Mississippi: c. 2 sq. mi.

itch (ich) *vi.* [ME. *icchen*, *icchen* < OE. *giccan*, akin to G. *jucken*] 1. to feel an irritating sensation on the skin, with the desire to scratch the affected part 2. to have a restless desire or hankering — *vt.* 1. to make itch 2. to irritate or annoy — *n.* 1. an irritating sensation on the skin that makes one want to scratch the affected part 2. a restless desire; hankering [an *itch* to travel] — the *itch* any of various skin disorders accompanied by severe irritation of the skin; specif., same as **SCABIES**

itch-y (-ē) *adj.* *itch'y-er*, *itch'y-est* like, feeling, or causing an itch — **itch'y-ly** *adv.* — **itch'y-ness** *n.*

-ite (it) [ME. < OFr. or L. or Gr.: OFr. *-ite* < L. *-ita*, *-ites* < Gr. *-itēs*, fem. *-itis*] *a n.-forming suffix meaning:* 1. a native, inhabitant, or citizen of [Brooklynite] 2. a descendant from or offspring of [Israeliite] 3. an adherent of, believer in, or member of [laborite] 4. a product, esp. a commercially manufactured one [lucite, dynamite, vulcanite] 5. a fossil [ammonite] 6. a part of a body or bodily organ [somite] 7. [Fr., arbitrary alteration of *-ate*, *-ATE*] a salt or ester of an acid whose name ends in *-ous* [nitrite, sulfate] 8. a (specified) mineral or rock [anthracite, dolomite]

-ite (it; in some words, it) [L. *-itus*, ending of some past participles] a suffix used variously to form adjectives, nouns, and verbs [finite, favorite, unite]

it-tem (it'əm) *adv.* [ME. < L. < *ita*, so, thus] also: used before each article in a series being enumerated — *n.* 1. orig., an admonition; hint 2. an article; unit; separate thing; particular; entry in an account 3. a bit of news or information — *vt.* [Archaic] same as **ITEMIZE**

SYN.—*item* applies to each separate article or thing entered or included in a list, inventory, record, etc.; *detail* applies to any single thing or small section that is part of a whole structure, design, etc. [an architectural detail, the details of a plot]; *particular* stresses the distinctness of a thing as an individual unit in a whole [to go into particulars]

***it-tem-ize** (-iz') *vt.* -ized', -iz'ing to specify the items of; set down by items [to itemize a bill of purchases] — **it-tem-iz-a-tion** *n.*

***item veto** executive power, as of some State governors, to veto a section of an appropriation bill without vetoing the whole bill

It-té-nez (ē tā'nes) *Boivin name of GUAPORÉ River*

it-er-ate (it'ə rāt') *vt.* -at'ed, -at'ing [< L. *iteratus*, pp. of *iterare*, to repeat < *iterum*, again < **iterus*, compar. of **i-*, pron. stem, whence *is*, *ea*, *id*, *he*, *she*, *it*, *ita*, thus] to utter or do again or repeatedly — **SYN.** see **REPEAT** — **it-er-ant** (-ər'ənt) *adj.*

it-er-a-tion (it'ə rā'shan) *n.* [ME. < L. *iteratio*] 1. an iterating or being iterated; repetition 2. something iterated Also **it'er-ance** (-ər'əns)

it-er-a-tive (it'ə rāt'iv, -ər'ətiv) *adj.* [ME. < MFr. *iteratif* < L. *iteratus*] 1. repetitious; repeating or repeated 2. *Gram.* same as **FREQUENTATIVE**

It-h-a-ca (it'h'ə kə) 1. one of the Ionian Islands, off the W coast of Greece: legendary home of Odysseus: 37 sq. mi.: Gr. name *i-thá-ki* (ē thá'kē) 2. city in WC N.Y., on Cayuga Lake: pop. 26,000 — **It-h'a-can** *adj.*, *n.*

I-thunn, I-thun (ē'ihōn) same as **IDUN**

It-h-y-phal-lis (it'h'y fāl'ik) *adj.* [L. *ithyphallicus* < Gr. *ithyphallos* < *ithyphallos*, erect phallus < *ithys*, straight (< IE. base **sīdh-*, to go directly toward, whence Sans. *sādhū-*, straight) + *phallos*, PHALLUS] 1. of the phallus carried in the rites of Bacchus 2. lewd; obscene; lascivious 3. in the meter of the Bacchic hymns — *n.* an ithyphallic poem

it-tin-er-an-cy (i tin'ərən sē, -i) *n.* 1. a) an itinerant, or traveling from place to place b) the state of being itinerant 2. a group of itinerant preachers or judges 3. official work requiring constant travel from place to place or frequent change of residence, as preaching or presiding over courts in a circuit Also **it-tin'er-a-cy** (-ə sē)

it-tin-er-ant (-ənt) *adj.* [LL. *itinerans*, pp. of *itinerari*, to travel < L. *iter* (gen. *itineris*), a walk, journey < base of *ire*, to go; see **YEAR**] traveling from place to place or on a circuit — *n.* a person who travels from place to place — **it-tin'er-ant-ly** *adv.*

SYN.—*itinerant* applies to persons whose work or profession requires them to travel from place to place [*itinerant* laborers, an *itinerant* preacher]; *ambulatory* specifically implies ability to walk about [an *ambulatory* patient]; *peripatetic* implies a walking or moving about in carrying on some activity and is applied humorously to persons who are always on the go; *nomadic* is applied to tribes or groups of people who have no permanent home, but move about constantly in search of food for themselves, pasture for the animals they herd, etc.; *vagrant* is applied to individuals, specif. hobos or tramps, who wander about without a fixed home, and implies shiftlessness, disorderliness, etc.

it-tin'er-ar-y (i tin'ər'ər'ē, -i) *adj.* [LL. *itinerarius* < *itinerans*; see prec.] of traveling, journeys, routes, or roads — *n.* pl. -ar'ies [LL. *itinerarium*, neut. of *itinerarius*] 1. a route, 2. a record of a journey 3. a guidebook for travelers 4. a detailed plan or outline for a proposed journey

it-tin'er-ate (-rāt') *vi.* -at'ed, -at'ing [< LL. *itineratus*, pp. of *itinerari*; see **ITINERANT**] to travel from place to place or on a circuit — **it-tin'er-a-tion** *n.*

-i-tion (ish'an) [< Fr. or L.: Fr. *-ition* < L. *-itio* (gen. *-itionis*) < -i-, thematic vowel + -tio (gen. *-itionis*)] *a n.-forming suffix; see -ATION* [nutrition]

-i-tious (ish'əs) [L. *-icius*, *-itius*] *an adj.-forming suffix corresponding to -ITION, meaning of, having the nature of, characterized by* [nutritious, seditious]

-i-tis (it'əs, -is) [ModL. < L. < Gr. *-itis*, orig. fem. of adjs. ending in *-itis*, used to modify *nosos*, disease (later understood, but omitted)] *a n.-forming suffix meaning:* 1. inflammatory disease or inflammation of (a specified part or organ) [neuritis, bronchitis] 2. addiction to, or weariness resulting from preoccupation with: used in nonce words [golfitis]

it'll (it'li) 1. it will 2. it shall

ITO International Trade Organization

-i-tol (i tōl', -tōl', -tāl') [< -ITE + -OL'] *a suffix used in forming the names of certain alcohols with more than one hydroxyl group* [mannitol]

its (its) *pron.* [Early ModE. analogical formation < *it* + *s*; written *it's* until early 19th c.: the ME. & OE. form was *his*] that or those belonging to it — **possessive pronominal adj.** of, belonging to, or done by it

it's (its) 1. it is 2. it has

it-self (it self') *pron.* a form of the 3d pers. sing., neuter pronoun, used: a) as an intensive [the work *itself* is easy] b) as a reflexive [the dog bit *itself*] c) as a quasi-noun meaning "its real, true, or actual self" (the bird is not *itself* today!); in this construction *it* may be considered a possessive pronominal adjective and *self* a noun, and they may be separated [*its own sweet self*]

it-ty-bit-ty (it'ē bit'ē) *adj.* [baby talk alteration < *little bit*] [Colloq.] very small; tiny: a facetious imitation of child's talk Also **it-ty-bit-sy** (it'ē bit'sē)

-i-ty (ə tē, -i) [ME. *-ite* < OFr. or L.: OFr. *-ité* < L. *-itas* < -i-, ending of stem, or thematic vowel + *-as*, -ty'] *a suffix meaning state, character, condition, or an instance of any of these* [chastity, possibility]

IU, I.U. international unit(s)

IUD intrauterine (contraceptive) device: also **IUCD**

-i-um (ēəm, yəm) [ModL. < L., ending of certain neuter nouns] *a suffix used:* a) in forming Modern Latin names for chemical elements [sodium] b) in designating certain positive ions [ammonium, carbonium]

i.v. 1. initial velocity 2. intravenous(ly)

I-van (i'vān; Russ. i vān') [Russ. < Gr. *Iōannēs*; see **JOHN**] 1. a masculine name 2. Ivan III 1440-1505; grand duke of Muscovy (1462-1505): called *the Great* 3. Ivan IV 1530-84; grand duke of Muscovy (1533-84) & 1st czar of Russia (1547-84): called *the Terrible*

I-va-no-vo (ē vā'nō vō) city in C European R.S.F.S.R.: pop. 398,000

I've (iv) I have

-ive (iv) [ME. < OFr. *-if*, fem. *-ive* < L. *-ivus*] *a suffix*

Ives

meaning:
nature or given to

Ives (ivz)

2. James M

i-vised (iv'v)

i-vo-ry (iv'v)

L. *eboreus*

abu, elepha

of dentine,

etc. 2. a) c

in appearar

4. a tusk or

of, resemble

piano keys

made of, or

i-iv-ry-bill

woodpecker

formerly of

ivory black

Ivory Coast

Guinea, we

l'Entente: 1

2. formerly,

ivory palm

ivory towe

from reality

I-ivy (iv'v)

I-ivy (iv'v)

G. *efe* (OH

1. a climber

with a wood

mentation on

climbing plant

etc. — *adj.* [

League

ivy League

ivy-covered]

J, j (jā) *n.*, *ph*
alphabet: for
became estat
originally spe
in English, p
or impression
sequence or gr
or group

J (jā) *n.* 1. an

direction of 1

—adj. shaped

J Physics the ir

J. J. Journal

Ja (yā) *adv.* [C

Ja, January

J.A. 1. Joint /

or thrust, as

short, straight

Ja-bal-pur (j

Pradesh: pop.

jab-ber (jab'ə

speak or say

chatter; gibbe

jab-berish — **ja**

jab-ber-wock-

poem by Lewi

to make sense;

jab-i-ru (jab'ə

wood 1815 2.

a genus (*Jabi*

(*Ephippiorhyn*

jab-o-ran-di (j

leaflets of vari

of the rue fam.

ja-bot (zha bō)

trimming or fri

of a blouse, bo

ja-cal (hā kāl')

Nahuatl xacalli

fat, ape, car; ten,

o for a in ago, e ir

u, Fr. *duc*; r, Fr